

UNDERFILL INTEGRATION FOR OPTICAL PACKAGES

ABSTRACT OF THE DISCLOSURE

The application discloses an apparatus comprising an optical die flip-chip bonded to a substrate and defining a volume between the optical die and the substrate, the optical die including an optically active area on a surface of the die facing the substrate, an optically transparent material occupying at least those portions of the volume substantially corresponding with the optically active area, and an underfill material occupying portions of the volume not occupied by the optically transparent material. Also disclosed is a process comprising flip-chip bonding an optical die to a substrate, the optical die including at least one optically active area on a surface thereof facing the substrate, dispensing an optically transparent material between the optical die and the substrate, wherein the optically transparent material covers the at least one optically active area, dispensing an underfill material in the volume between the optical die and the substrate not occupied by the optically transparent material, and curing the optically transparent material and the underfill material. Other embodiments are described and claimed.